

## RULE 1102

### Fugitive Emissions of VOCs from Components at Pipeline Transfer Stations

#### (A) General

- (1) Purpose: To control fugitive emissions of volatile organic compounds (VOCs) due to component leaks at facilities involved in the transfer and/or storage of petroleum products, crude oil or natural gas in pipelines.
- (2) Applicability: This rule applies to components at pipeline transfer stations which may be sources of fugitive VOC emissions.

#### (B) Definitions

For the purposes of this rule only, the following definitions shall apply:

- (1) "Appropriate Analyzer" - A hydrocarbon analyzer that meets the requirements of EPA Reference Method 21 and is calibrated with methane.
- (2) "Background" - The ambient concentration of volatile organic compounds in the air determined at least one (1) meter upwind of the component to be inspected.
- (3) "Component" - Any pump, compressor, pressure relief device, flange, valve, fitting, diaphragm, open ended line, hatch, seal packing, sealing mechanism, sight glass or meter. They are further classified as:
  - (a) "Major Component" - Any four inch or larger valve, any 5-hp or larger pump, any compressor and any four inch or larger pressure relief device.
  - (b) "Minor Component" - Any component that is not a major component.
  - (c) "Critical Component" - Any component which would require the shutdown of the process unit if the component was shut down. Such components must be identified by the source and approved by the APCO.

- (4) "Component Types" - Any of the following groups: pumps, compressors, pressure relief devices, flanges, valves, fittings, diaphragms, open ended lines, hatches, seal packings, sealing mechanisms, sight glasses or meters
- (5) "Compressor" - A device used to compress gases and/or vapors by the addition of energy, and includes all associated components used for connecting and sealing purposes.
- (6) "Fitting" - A component used to attach or connect pipes or piping details, including but not limited to flanges and threaded connections.
- (7) "Flange" - A projecting rim on a pipe used to attach it to another pipe or any other component in a piping system.
- (8) "Fugitive Emissions" - Hydrocarbon emissions that are released into the atmosphere from any point other than a stack, chimney, vent or other functionally equivalent opening.
- (9) "Good Performance Level" - A "Good Performance Level" has been accomplished when: (1) two percent or less of the components within a component type subject to the provisions of this rule are found to leak during an inspection and (2) have not been cited with a Notice of Violation from the District for violation of Section I of this rule within the previous five quarters. A reduction in inspection frequency based on a "good performance level" shall apply to all component types, except for pumps, compressors and pressure relief valves.
- (10) "Hatch" - Any covered opening system that provides access to a tank or container, usually through the top deck.
- (11) "Heavy Liquid Service" - Any component which contains or contacts a liquid containing VOCs of which 10 percent or less by weight evaporate at 150 degrees centigrade and atmospheric pressure, as measured according to the test method specified in [Section \(H\)\(4\)](#).
- (12) "Inaccessible" - A location that is over 15 feet above ground when access is required from the ground; or a location that is over six (6) feet away from a platform when access is required from the platform.
- (13) "Inspection" - Either of the following:
  - (a) "Operator Inspection" - A survey of components by the operator for the purpose of determining compliance with this rule.

- (b) "District Inspection" - A survey of components by District personnel or their representatives.
- (14) "Leak" - Any of the following:
  - (a) The dripping at a rate of more than three (3) drops per minute of liquid containing VOCs; or
  - (b) A reading of methane on an appropriate analyzer in excess of 10,000 ppmv above background when measured with an instrument calibrated with methane, according to EPA Method 21.
- (15) "Notice of Violation" - An official notice to an operator for violating requirements of this rule which may result in District enforcement action.
- (16) "Open Ended Line" - Any valve, except pressure relief valves, having one side of the valve seat in contact with the process fluid and one side open to the atmosphere.
- (17) "Pipeline Transfer Station" - Any facility which handles the transfer and/or storage of petroleum products or crude petroleum in pipelines. Includes pumping stations and natural gas compressor stations.
- (18) "Platform" - Any raised, permanent, horizontal surface for the purpose of gaining access to components.
- (19) "Pressure Relief Device" - A pressure relief valve or a rupture disc.
- (20) "Pressure Relief Valve" - A valve which is automatically actuated by upstream static pressure, and used for safety or emergency purposes.
- (21) "Pump" - A machine or device for transferring a liquid or gas from a source or container through tubes or pipes to another container or receiver.
- (22) "Repair" - Any corrective action for the purpose of eliminating leaks
- (23) "Rupture Disc" - A diaphragm held between flanges for the purpose of isolating a VOC from the atmosphere or from a downstream pressure relief valve.
- (24) "Turnaround" - The scheduled shutdown of a unit for maintenance and repair work.
- (25) "Unsafe" - Refers to components installed at locations that prevent the safe inspection or repair of components as defined by OSHA standards or in provisions for worker safety found in 29 CFR 1910.

**MDAQMD RULE 1102**

- (26) "Valve" - A device that regulates or isolates the flow of liquids or gases in a piping system by means of an external actuator.
- (27) "Visible Leak" - Any indication of liquid leaking, visible mist, or audible leak.
- (28) "Volatile Organic Compound (VOC)" - Any compound containing at least one atom of carbon, except for the following exempt compounds: methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate and those compounds listed in [40 CFR 51.100\(s\)\(1\)](#).

### (C) Operating Requirements

- (1) Hatches shall be closed at all times except during sampling, adding process material or attended maintenance operations.
- (2) Each open-ended line that has the potential to emit vapors shall be sealed with a second valve, a blind flange, a cap or a plug, except when open end is in use.

### (D) Operator Inspection Requirements

- (1) Except as provided in [Sections \(D\)\(4\)](#) and [\(D\)\(6\)](#), operators shall monitor accessible components at least every calendar quarter for gaseous leaks in accordance with the test method specified in [Section \(H\)\(2\)](#).
- (2) Inaccessible and unsafe components shall be subject to the inspection requirements of [Section \(F\)\(2\)\(b\)](#).
- (3) A pressure relief valve shall be inspected quarterly, and within 14 calendar days after every functional pressure relief, pursuant to the test method specified in [Section \(H\)\(2\)](#).
- (4) All threaded and flanged connections shall be inspected by the operator according to the test method specified in [Section \(H\)\(2\)](#) immediately after assembly and annually thereafter.
- (5) All accessible pumps, compressors and pressure relief valves shall be audio-visually inspected for leaks not less than daily, except for unmanned pipeline transfer stations, which shall be inspected monthly. If a leak is detected, the VOC concentration shall be determined pursuant to the test method specified in [Section \(H\)\(2\)](#).

- (6) The inspection frequency for all accessible components, except pumps, compressors and pressure relief valves, may be changed from quarterly to annual, provided all of the following conditions are met:
  - (a) Achieve a "good performance level" as defined in Section (B)(9) for five (5) consecutive quarters.
  - (b) The above is substantiated by documentation and submitted to and approved by the APCO.
- (7) Quarterly monitoring shall be reinstated by the operator during the next calendar quarter upon failure to achieve a "good performance level."
- (8) An operator shall be in violation of this section when the leak rate of a component type exceeds two (2) percent of the total number of components of that type subject to the requirements of this rule.

#### (E) Operator Repair Requirements

- (1) Any component found leaking shall be repaired to a leak-free condition within fifteen days of detection.
- (2) The requirements of Section (E)(1) shall not apply to leaking critical components, as identified under Section (G)(1) of this rule. Repair of critical components shall be accomplished during the next scheduled shutdown or process turnaround of the unit, but not later than three (3) months from the date of detection.
- (3) Any component leak identified by the District shall be inspected and repaired as required by Sections (D) and (E), respectively.
- (4) The operator shall reinspect components for leaks as soon as practicable, but not later than thirty (30) days after the date on which the component is repaired and placed in service, in accordance to the test method specified in Section (H)(2).

#### (F) Exemptions

- (1) The provisions of this rule shall not apply to the following cases, where the person seeking the exemption shall supply the proof of the applicable criteria to the satisfaction of the APCO or his designee:

- (a) Any component exclusively handling liquids, gasses or gaseous process fluids with a VOC concentration of 10% or less by weight, as determined by the test method specified in [Section \(H\)\(3\)](#); or
  - (b) Any component in heavy liquid service.
  - (c) Components which are part of a process unit not in service.
  - (d) Components incorporated in lines, while operating under negative pressure.
  - (e) Components totally contained or enclosed such that there are no VOC emissions into the atmosphere.
  - (f) Components buried below ground.
  - (g) One-half inch and smaller stainless steel tube fittings which have been demonstrated to the APCO to be leak-free based on an initial inspection in accordance with the test method specified in [Section \(H\)\(2\)](#).
  - (h) Pressure vacuum valves on storage tanks.
- (2) The operator inspection requirements of [Section \(D\)](#) shall not apply to the following components; all other requirements of the rule shall remain in force:
- (a) Pressure relief valves, pumps and compressors that are equipped with a closed-vent system capable of capturing and transporting any leak to a vapor control system.
  - (b) Any component situated in an unsafe or inaccessible location. Components in unsafe areas shall be inspected and repaired at the next process turnaround. Inaccessible components shall be inspected at least annually.
  - (c) Components handling liquids of:
    - (i) less than or equal to 20 degree API gravity after the point of primary separation; or
    - (ii) between 20 and 30 degree API gravity, which are located after the point of primary separation of oil and gas, provided the separation vessel is equipped with a vapor recovery system and is operated at a pressure less than 25 psig.

- (d) Components qualifying for the exemptions in Section (F)(2)(c)(i) and (ii) shall be subject to the following:
  - (i) The operator shall perform visual inspections on a quarterly basis. Upon detection of a visible leak, the leak shall be measured to quantify emission concentrations according to the test method specified in Section (H)(2).
  - (ii) The quarterly visual inspection can be changed to an annual inspection if the requirements of Sections (D)(6) and (7) are satisfied.
  - (iii) Any leak detected during a District inspection may constitute a violation of this rule.

## (G) Recordkeeping and Reporting

- (1) Any person subject to the requirements of this rule shall maintain an inspection and identification log, containing, at a minimum, the information specified below. The log must be initially approved by the APCO for the purposes of inspection, repair, replacement and recordkeeping, and shall comply with the compliance schedule requirements specified in Section (J):
  - (a) All major and critical components subject to this rule shall be physically identified, clearly and visibly. The identification shall consist of labels, tags or other system which enables the District or the operator to locate each individual component. The log must identify the system to be used, the affected components and their locations.
  - (b) All major, critical, inaccessible and unsafe components subject to this rule, except flanges and fittings, shall be clearly identified in diagrams, as approved by the APCO.
  - (c) The APCO shall be notified of any change in the identification of a major component and the operator shall document such a change in the inspection and identification log.
  - (d) For each component identified pursuant to Sections (G)(1)(a) and (b), and for minor components subject to the provisions of this rule, the following information shall be recorded following each operator inspection:
    - (i) Name, location, components types and description of any unit where leaking components are found.
    - (ii) Date of leak detection, emission level (ppmv) and method of leak detection.

- (iii) Date of repair.
  - (iv) Date and emission level of reinspection after leak is repaired.
  - (v) Total number of components inspected, and total number and percentage of leaking components found, by component types.
- (2) Copies of the inspection and identification log shall be retained on site for a minimum of two years.
- (3) Copies of the inspection and identification log shall be made available to the APCO or his designee at the time of District inspection.

## (H) Test Methods for Compliance Verification

- (1) The determination of the exempt compounds shall be determined by [ASTM D4457-85](#) and be consistent with the provisions set forth in the Federal Register (FR, Vol. 56, No. 52, March 18, 1991.) Perfluorocarbon compounds shall be assumed to be absent from a product or process unless a manufacturer or facility operator identifies a specific compound(s) from the broad classes of perfluorocarbon compounds listed in [40 CFR 51.100\(S\)\(1\)](#) as being present in the product or process. When such compounds are identified, the facility shall provide the validated test method to determine the amounts of the specific compound(s).
- (2) The measurement of gaseous VOC leak concentrations shall be determined according to [EPA Method 21](#) by using an appropriate analyzer calibrated with methane.
- (3) The VOC content of fluids shall be determined using [ASTM Methods E168-88, E169-87 or E260-85](#) or updated versions of these methods approved by EPA and published in [40 CFR Part 60](#).
- (4) The determination of percent evaporation at 150° shall be performed in accordance with [ASTM D86-82](#).
- (5) The determination of API gravity of crude oil shall be performed in accordance with [ASTM D287](#).

## (I) Violations

The failure to comply with any requirements of this rule shall constitute a violation of this rule.

(J) Compliance Schedule

- (1) The operator of any existing facility subject to this rule shall submit a copy of the inspection and identification log to be utilized pursuant to Section (G) of this rule to the District for approval by January 26, 1995. Upon approval, the operator shall comply with all provisions of this rule, including the initiation of the required inspection and recordkeeping.
- (2) After October 26, 1994 and prior to commencement of operation, the operator of a new facility subject to this rule shall submit an inspection and identification log to the District for approval. Upon approval, the operator shall comply with all provisions of this rule, including the initiation of the required inspection and recordkeeping.

[SIP: Approved: 9/27/95, 60 FR 49772, 40 CFR 52.220(c)(207)(I)(D)]